CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION

81 Higuera Street, Suite 200
San Luis Obispo, California 93401-5427

ORDER NO. 94-62

SWIS# 44-AA-0001

WASTE DISCHARGE REQUIREMENTS FOR CITY OF SANTA CRUZ CLASS III LANDFILL SANTA CRUZ COUNTY

The California Regional Water Quality Control Board, Central Coast Region (hereafter Board), finds that:

1. The City of Santa Cruz (hereafter "Discharger") owns and operates the Santa Cruz Class III Landfill with ancillary Class II "leachate" ponds undergoing closure (hereafter "Landfill").

2. The 100 acre Landfill has an approximate 30 acre "fill limit area" and a 26.3-acre future fill area. This facility is located in the coastal region of Santa Cruz County, about three miles west of the City limits. The site is accessed by Dimeo Lane off State Highway 1. The Landfill is located in Section 17, Township 11 South, Range 2 West, Mount Diablo Base and Meridian, Santa Cruz County, as shown on **Attachments 1 and 2,** included as part of this Order.

3. These Waste Discharge Requirements (Requirements) are being revised/updated to incorporate criteria currently applicable to solid waste disposal sites, particularly:

   a. criteria established in California Code of Regulations, Title 23, Division 3, Chapter 15 (Chapter 15), including Article 5, pertaining to landfill water quality monitoring and response programs, as amended July 1, 1991; and

   b. criteria established in 40 CFR Parts 257 and 258 Solid Waste Facility Disposal Criteria, Final Rule (Known as "Subtitle D"), as promulgated October 9, 1991.

4. This Order revises/updates and replaces Order No. 91-21, as adopted on February 15, 1991. In addition, this Order is intended to update items in Cease and Desist Orders 93-100 and 92-81 adopted by the Board on September 10, 1993 and June 12, 1992, respectively. Implementation of applicable revised Article 5 monitoring requirements and various other pertinent landfill changes, including compliance with Federal (Subtitle D) landfill regulations, will bring the Landfill into compliance with current landfill requirements.

Physical Description

5. Land use within 1000 feet of the Landfill includes: agricultural, residential and State Park Land. The property immediately south of the landfill is privately owned residential property. An old burn dump area is located along the eastern border of the active landfill area coincident with some leachate ponds and within the planned future refuse disposal area. The rest of the property adjacent the landfill is owned by the California Department of Parks and Recreation (State Parks). Some of the park land is leased to farmers. The headwaters of the two incised canyon drainages that join under the landfill are owned by State Parks.

6. The Landfill is built over two seasonal streams that converge under the middle of the landfill and become Lombardi Creek. Elevation of the 100-acre landfill property ranges from 110 feet to 530 feet Mean Sea Level.

7. Three primary geologic units are found in the vicinity of the Landfill. The largest area is underlain by the Santa Cruz Mudstone. Overlying the Santa Cruz Mudstone along the broad ridges adjacent to the Landfill are thin (less than 10 feet thick) deposits of marine terrace deposits. Santa Margarita Sandstone, about 90-140 feet thick, underlies the Santa Cruz Mudstone and outcrops at and under the landfill toe. Lompico Sandstone, which underlies the Santa Margarita Sandstone, thins and eventually "pinches out" probably north of the Landfill. Bedding in these units dips gently (2-8 degrees) to the south-southwest.

8. The Discharger's data demonstrate natural geologic materials between the base of the landfill and ground water cannot ensure that degradation of beneficial uses of ground water beneath or adjacent to the Landfill will not occur.

9. The Landfill is approximately five miles from the Hosgri/San Simeon/Palo Colorado/San Gregorio fault system with a Maximum Probable Earthquake of Richter Magnitude in the magnitude 7± range (Magnitude 7.5 has been used for slope design of residential structures in the Big Sur area) which corresponds to a peak horizontal bedrock acceleration of approximately 0.5g at the site. The Zayante Fault (associated with the Loma Prieta earthquake) and the San Andreas Fault are ten and thirteen miles from the site, respectively. A more detailed site specific analysis of seismic design criteria will be conducted as part of the Seismic Slope Stability Report.

Water Resources

10. In general, ground water recharge occurs in two areas near the Landfill, (1) the exposed Lompico Sandstone (which underlies the Santa Margarita Sandstone north of the site) to the north and, (2) the Santa Margarita Sandstone exposed to the south and east. Rainfall, which averages 50 inches per year, is the primary source of recharge water. Ground water contained in the Lompico Sandstone and Santa Margarita Sandstone in the northern portion of the Landfill is under confined conditions. Natural geologic conditions create springs in the Landfill's central and eastern portions. Several springs have been covered by waste. One spring under the landfill (designated SA) is suspected to significantly dewater the Santa Margarita Sandstone locally.

11. Ground water quality is monitored by a system of ground water monitoring wells. Depth to ground water generally ranges from 30 to 110 feet below ground surface. The Landfill's hydraulic gradient ranges from an estimated 0.04 feet per foot in the northern area to 0.11 feet per foot in the southern area. Ground water contained in the Santa Margarita Sandstone in the vicinity of the Landfill is generally flowing to the south and southwest, with localized flow to the discharging springs. Porosity of Santa Margarita Sandstone ranges from 5 to 30 percent. Ground water flow velocity for Santa Margarita Sandstone ranges from approximately 1.3×10^{-3} feet/day to 2.2 feet/day.

12. Natural water quality in the area appears to be well within drinking water standards.

13. At least three springs exist within one mile of the Landfill. Within two miles to the southeast of the Landfill are agricultural irrigation wells which produce from the Santa Margarita Sandstone.

14. Benzene has been detected several times in well W-4S, the shallow well near the recycling area (see Attachment A of the Monitoring and Reporting Program). A Solid Waste Assessment Test found inorganic constituents exceeded background. Evaluation monitoring is required and is reportedly being planned. The source of the benzene is not known. Historically, there was a go-cart-track in the vicinity. Also, leachate has leaked from the existing leachate collection and evaporation ponds located adjacent to and above the Landfill. Leachate is also produced by springs beneath the Landfill, impounded surface waters in channels north of the landfill, and infiltration of precipitation.

15. The Landfill has a series of ditches and pipes to conduct and separate surface water from leachate. The primary collection system is a disjointed pipeline located along the bottom of the Landfill's canyon floor. The open pipe joint collects leachate and ground water under the Landfill mass.

Beneficial Uses

16. The Water Quality Control Plan, Central Coast Basin (Basin Plan), was adopted by the Board on November 17, 1989 and amended February 8, 1994. The State Water Resources Control Board approved the Basin Plan on August 16, 1990 and the Basin Plan amendments on May 18, 1994. The Basin Plan incorporates statewide plans and policies by reference and contains a strategy for protecting beneficial uses of State Waters. This Order implements the water quality objectives stated in the Basin Plan.

17. Present and anticipated beneficial uses of surface waters downgradient of the discharge include:

    a. Agricultural Supply;
    b. Ground Water Recharge;
    c. Water Contact Recreation;
    d. Non-contact Water Recreation;
    e. Wildlife Habitat; and
    f. Cold Fresh Water Habitat.

18. Present and anticipated beneficial uses of ground water in the vicinity of the discharge include:

    a. Domestic and Municipal Supply;
    b. Agricultural Supply; and
    c. Industrial Supply.

Landfill Specifics.

19. The Landfill currently receives approximately 84,500 tons per year of nonhazardous solid wastes and 11,700 tons per year of wastewater sludge. Waste is placed by the area fill method in lifts averaging 20 feet thick. Refuse is spread and compacted in two-foot-thick layers on a working face approximately 100-feet wide, 3:1 or flatter sloped working face. The advancing face is covered with a minimum 6-inch-thick layer of daily soil cover and graded to drain. Fill areas, inactive for 180 days or more, are covered with at least one foot of intermediate soil cover and graded at a minimum of 3 percent to minimize infiltration.

20. The Landfill is in conformance with the 1989 Santa Cruz County Solid Waste Management Plan and operates pursuant to Solid Waste Facilities Permit No. 44-AA-0001 issued by the Santa Cruz County Environmental Health Service Department, and the California Waste Management Board.

21. Six buildings are on the property: a gate house, an employee building, a co-generation plant, an equipment shed, a storage and tool shed, and a pump house that is located by the lowest leachate pond. Three standby generators for emergency power are on the site. Located by the gate house is a large, 250 feet x 300 feet, recycling area surrounded by a cyclone fence. Within the recycling area is an 10,000 square foot building that houses a recycling operation.

22. A methane gas recovery system, consisting of 22 vertical recovery wells and a cogeneration facility, has been constructed. A private contractor installed and owns, and operates the system. Methane gas is utilized to generate electric power that is sold to Pacific Gas & Electric Company.

23. Site water is provided from the City water system. The water is pumped to a 10,000 gallon water tank located on the east ridge. The tank supplies water to the Landfill buildings and the five residences south of the Landfill along Dimeo Lane.

24. All new landfills must be designed to meet or exceed minimum standards established in Chapter 15. The existing Landfill does not meet the prescriptive Leachate Collection and Removal System (LCRS) construction criteria for new Class III waste management units as defined in Section 2543 (e) of Chapter 15, which states:

    "Leachate collection and removal system shall consist of a permeable subdrain layer which covers the bottom of the waste management unit and extends as far as the sides as possible, (i.e.,blanket-type) except as provided in subsection (f) of this section. The collection and removal system shall be of sufficient strength and thickness to prevent collapse under the pressure exerted by overlying wastes, waste cover materials, and by any equipment used with the waste management units."

25. This is an existing landfill which has accepted Waste Water Treatment Plant (WWTP) sludges daily for about 20 years.

26. The Landfill meets the criteria of the California Code of Regulations as stated in Chapter 15 for classification as a Class III landfill suitable to receive non-hazardous solid wastes. This Order implements the prescriptive standards and performance goals of Chapter 15, as adopted by the State Water Resources Control Board on October 18, 1984, and as amended on July 1, 1991.

27. Wastes containing greater than one percent (>1%) friable asbestos are classified as hazardous under California Code of Regulations, Title 22. Since such wastes do not pose a threat to water quality, Section 25143.7 of the Health and Safety Code permits its disposal in permitted landfills, providing waste discharge requirements specifically allow the discharge and the wastes are handled and disposed in accordance with other applicable State and Federal statutes and regulations.

28. The Discharger proposes to complete closure of the former leachate collection ponds by excavating the area and disposing of sludge and contaminated soils within a new composite lined waste cell.

29. A feasibility report for a proposed fresh water bypass tunnel has been submitted for RWQCB review. Design documents are anticipated to be ready on or about January 27, 1995.

Statements of Regulation

30. Due to revisions of Article 5, of Chapter 15, the Discharger submitted a June 1992 Report of Waste Discharge to update Waste Discharge Requirements for the Landfill, including a monitoring and reporting program. It includes proposals for some improvement to the ground water detection monitoring program, and the establishment of a financial assurance instrument to cover all expenses related to future corrective action costs. The proposed financial assurance and monitoring program are inadequate and are required by this Order to be enhanced. Surface and ground water monitoring programs need to be enhanced and a vadose zone monitoring plan is needed.

31. On October 9, 1991, the United State Environmental Protection Agency (US EPA) promulgated regulations pertaining to solid waste disposal facilities known as 40 CFR, Parts 257 and 258 Solid Waste Disposal Facility Criteria, Final Rule (also known as Subtitle D). California has received US EPA authorization (became an "Approved" State) to implement the Federal Subtitle D regulations. The Subtitle D regulations for the Santa Cruz City Landfill became effective and self-implementing on October 9, 1993. The Subtitle D regulations establish minimum criteria for location, design, operation, clean-up, and closure for most municipal solid waste landfills. Subtitle D implementation/applicability is as follows:

A. Municipal solid waste landfills with Requirements that stopped receiving waste on or before October 9, 1991 are exempt from Subtitle D except for monitoring requirements and deed restrictions.

B. Municipal solid waste landfills that received waste on or after October 9, 1991, but stopped prior to October 9, 1993, must meet only the final cover requirements specified in Section 258.60(a).

C. Municipal solid waste landfills that received waste on or after October 9, 1993 must comply with all requirements of Subtitle D.

Federal Subtitle D ground water and corrective action requirements become effective October 9, 1994 for the Landfill and lateral expansions. Financial assurance requirements become effective April 9, 1995.

32. Discharge of waste is a privilege, not a right, and authorization to discharge waste is conditioned upon the discharge complying with provisions of Division 7 of the California Water Code and with any more stringent limitations necessary to implement the Basin Plan, to protect beneficial uses, and to prevent nuisance. Compliance with this Order should assure conditions are met and mitigate any potential changes in water quality due to the project.

33. The City has completed an environmental review of the proposed expansion and impoundment closure. The City prepared a negative declaration which was adopted by the City Council on November 1, 1994.

34. The Order contains prohibitions, discharge specifications, water quality protection standards, and provisions intended to protect the environment by mitigating or avoiding impacts of the project on water quality. This Order is for an existing facility and as are exempt from provisions of the California Environmental Quality Act (Public Resources Code, Section 21000, et seq.) in accordance with Title 14, California Code of Regulations, Chapter 3, Section 15301.

Board Dates

35. On July 22, 1994 the Board notified the Dischargers and interested agencies and persons of its intention to update the waste discharge requirements and has provided copies of the proposed Order and an opportunity to submit written views and comments.

36. After considering all comments pertaining to this discharge during a public hearing on November 18, 1994, this Order was found consistent with the above findings.

IT IS HEREBY ORDERED pursuant to authority in Section 13263 of the California Water Code, the City of Santa Cruz, its agents, successors, and assigns may discharge wastes at the Santa Cruz City Class III Landfill, providing compliance is maintained with the following:

(Throughout this Order, footnotes are listed to indicate the source of requirements specified. Footnotes are as follows:

a=CCR, Title 23, Chapter 15
b=Basin Plan
c=CFR, Part 257 and 258 (Subtitle D)
d=California Water Code

Requirements without footnotes are based on professional judgement.)

A. DISCHARGE PROHIBITIONS

General Prohibitions

1. Discharge of waste to areas outside the designated disposal area, as specified on **Attachment "2"**, is prohibited.

2. Discharge of solid wastes within the "designated disposal area", where refuse placement has not occurred, is prohibited; unless a composite liner system, as described in **Specification B.38, B.40, and B.41** is provided.[c]

3. Discharge of hazardous waste, except for waste that is hazardous due only to its asbestos content, is prohibited. For the purposes of this Order, the terms hazardous waste is as defined in Chapter 15.[a]

4. Discharge of designated waste is prohibited except when the discharger demonstrates to the Executive Officer's satisfaction that waste constituents present a lower risk of water quality degradation than indicated by this classification. For the purpose of this Order the term "designated waste" is defined in Chapter 15.[a]

5. Discharge of "liquid wastes" or "semi-solid wastes" (i.e., wastes containing less than 50 percent solids by weight), other than leachate and gas condensate as described in **Discharge Specification B.20** and dewatered domestic sludge is prohibited. Exemptions to discharging wastes containing less than 50% solids by weight may be granted by the Executive Officer if the Discharger can demonstrate the discharge will not exceed the moisture-holding capacity of the Landfill, either initially of a result of waste management operations, compaction, and/or settlement.[a]

6. Discharge of dewatered sewage or water treatment sludge, which contains less than 50% solids by weight to any Landfill areas, shall meet conditions identified in **Discharge Specification B.17.**[a]

7. Discharge of waste to ponded water from any source is prohibited.[a]

8. Ponding of liquids over solid wastes is prohibited.[a]

9. Discharge of leachate or gas condensate containing hazardous concentrations of constituents is prohibited.[a]

10. Discharge of wastes that would reduce or impair the integrity of containment structures is prohibited.[a]

11. Discharge of wastes which, if commingled with other wastes in the unit, could produce violent reaction, heat or pressure, fire or explosion, toxic by-products, or reaction products which in turn:

    a. require a higher level of containment than provided by the Landfill,

    b. are restricted hazardous wastes, or

    c. impair the integrity of containment structures,

    is prohibited.[a]

12. Discharge of wastes within five (5) feet of the highest anticipated water table elevation, including the capillary fringe, is prohibited. If excavations encounter ground water or come within five (5) feet of ground water, native soil shall be replaced and compacted, or an engineered equivalent (e.g.: dewatering) shall be provided, to satisfy this specification.[a]

13. Discharge of waste within 50 feet of the property line, 100 feet of surface waters, or 100 feet of domestic water supply wells is prohibited.

14. Discharge of solid or liquid waste or leachate to surface waters, drainageway(s), or ground water, is prohibited.

15. Discharge of solid or liquid waste containing free liquid or moisture in excess of the waste's moisture holding capacity is prohibited. Waste must pass the paint filter test to determine if free liquids are present.[a,c]

16. Discharge of waste solvents, dry cleaning fluids, paint sludge, pesticides, phenols, brine, and acid and alkaline solutions is prohibited.[a]

17. Discharge of oils or other liquid petroleum products is prohibited.

18. Discharge of chemical and biological warfare agents is prohibited.

19. Discharge of leachate or Landfill gas condensate to any landfill Waste Management Unit (WMU) is prohibited, unless:

    a. The Landfill gas condensate or leachate is being returned to the Landfill WMU that produced it; and

    b. The portion of the Landfill to which these materials are discharged is equipped with a containment system as outlined in **Specification B.38, B.40, and B.41** below.[c]

Site Specific

B. DISCHARGE SPECIFICATIONS

General Specifications

1. The Discharger shall implement the attached Interim Monitoring and Reporting Program (MRP) No. 94-62 to detect, at the earliest opportunity, any unauthorized discharge of waste constituents from the Unit, or any unreasonable impairment of beneficial uses associated with (caused by) discharges of waste to the Unit.[a] The Executive Officer may revise MRP No. 94-62 according to the City of Santa Cruz's improved landfill monitoring plan.

2. Discharge of waste shall not cause the concentration of any Constituent of Concern or Monitoring Parameter to exceed its respective background value in any monitored medium at any Monitoring Point assigned to Detection Monitoring pursuant to the current version of the MRP.

3. Discharge of waste shall not cause the release of pollutants, or waste constituents in a manner which could cause a condition of pollution or nuisance to occur, as indicated by the most appropriate statistical [or non-statistical] data analysis method and retest method listed in the **MRP, Part III.**[a,b]

4. Discharge of waste shall neither cause nor contribute to the pollution of ground water via the release of waste constituents in either liquid or gaseous phase.

5. Discharge of waste shall neither cause nor contribute to any surface water pollution or nuisance, including, but not limited to:

    a. Floating, suspended, or deposited macroscopic particulate matter or foam;

    b. Increases in bottom deposits or aquatic growth;

    c. An adverse change in temperature, turbidity, or apparent color beyond natural background levels;

    d. The creation or contribution of visible, floating, suspended, or deposited oil or other products of petroleum origin;

    e. The introduction or increase in concentration of toxic or other pollutants/contaminants resulting in unreasonable impairment of beneficial uses of waters of the State.

6. The discharge of waste shall not cause any increase in the concentration of waste constituents in soil-pore gas, soil-pore liquid, soil, or other geologic materials outside of the Landfill if such waste constituents could migrate to waters of the State in either liquid of gaseous phase and cause a condition of pollution or nuisance.

7. With written approval of the Executive Officer, Water (including non-hazardous and non-designated leachate and gas condensate) used during disposal site operations shall be limited to the minimal amount necessary for dust control, construction (soil compaction), and vegetation establishment/irrigation purposes. The Discharger shall minimize the infiltration of rain-water and prevent infiltration of leachate or gas condensate into areas containing refuse, except as allowed by **Prohibition A.19**.

8. Disposal site operations shall not be a source of odor nuisance.

9. The discharger shall prevent formation of a habitat for carriers of pathogenic microorganisms.

10. The handling and disposal of asbestos containing wastes shall be in accordance with all applicable federal, state, and local statutes and regulations.

11. Ash wastes may be discharged in the Landfill only when chemical analyses demonstrate to the Executive Officer's satisfaction that the waste is non-hazardous.[a] The on-site burn ash characterized by the California Integrated Waste Management Board as below hazardous waste levels can be placed in the proposed new Subtitle D lined cell when it is opened.

12. Wastes discharged in violation of any adopted Requirements after the adoption date of this Order, shall be removed and relocated.

13. All refuse material that is wind-blown outside the active Landfill area shall be collected regularly and disposed in the Landfill. If wind-blown litter becomes a continuing problem, a containment barrier (additional screens and/or fences) shall be constructed to prevent spreading of refuse.

14. The Discharger shall obtain and maintain a Financial Assurance Instrument (Instrument) to demonstrate financial responsibility for initiating and completing corrective action of all known or reasonably foreseeable releases from the Landfill until the end of the Post-Closure Maintenance Period, pursuant to Chapter 15 regulations. The Instrument shall be legally valid, binding and enforceable under State and Federal law.[a]

15. A program for periodic intake load-checking shall be maintained to ensure that 'hazardous waste,' 'designated waste' and 'radioactive waste' are not discharged at this Landfill.[a]

16. The Discharger shall operate the Landfill in conformance with the most recently Executive Officer approved Master Plan, Operations Plan, and/or Site Development Plan, except where the Plan(s) conflict with this Order. In the event of conflict, this Order shall govern in cases where it is most restrictive. Any changes to the Plan(s) that may affect compliance with this Order must be approved in writing by the Executive Officer.[a,b]

17. Discharge of dewatered sewage sludge or water treatment sludge to the Landfill shall meet <u>all</u> of the following criteria:

    a. dewatered domestic sludge which is utilized beneficially as soil amendment to promote vegetation over intermediate or final cover may be allowed with written Executive Officer approval;

    b. sludge discharged into the Landfill shall be <u>only</u> to Units equipped with a dendritic/blanket-type leachate collection and removal system (LCRS) or acceptable equivalent immediately above the liner. However, if the sludge contains greater than 50% solid by weight, an LCRS may not be required depending on site specific conditions and upon Executive Officer approval;

    c. a daily minimum solid waste-to-sludge ratio of 5 to 1 by weight shall be maintained to ensure co-disposal will not exceed the moisture-holding capacity of the nonhazardous solid waste. The actual ratio required by the Board shall be based on site-specific conditions;

    d. primary and mixtures of primary and secondary sludge shall contain at least 20 percent solids by weight; and,

    e. secondary sewage sludge or water treatment sludge shall contain at least 15 percent solids by weight.

18. Waste shall not be discharged to a wetland, as defined in 40 CFR Section 232.2(r), or to any portion thereof, unless the Discharger successfully completes all demonstrations pursuant to 40 CFR Section 258.12(a). Such demonstration is subject to approval of the Executive Officer.[d]

19. Refuse shall be covered daily by at least six inches of cover material or, if allowed by the Local Enforcement Agency, meet Performance Standards of the California Code of Regulations, Title 14, Section 17683. Cover shall promote lateral runoff of rainfall away from the active disposal area. Upon Executive Officer approval, alternative daily cover materials may be utilized. Long-term alternatives to the daily cover requirements must satisfy the alternative daily cover Procedures and be approved by the California Integrated Waste Management Board.[a,b]

20. Condensate collected from the methane gas recovery operation may be discharged to a Waste Management Unit if the following conditions are met:

    a. the Landfill condensate or leachate shall be returned to the appropriately lined portion of the Landfill that produced it. The containment system must meet the performance standard of **Discharge Specification B.38, B.40, and B.41** of this Order;

    b. condensate shall have no chemical additives which could adversely affect containment features, and shall consist only of water and liquid contaminants removed from the gas recovered at a WMU; and,

    c. condensate is discharged only in compliance with this Order.

Wet Weather

21. By **October 1** of each year, all necessary runoff diversion and erosion prevention measures shall be implemented. All necessary construction, maintenance, or repairs of precipitation and drainage control facilities shall be completed to prevent erosion or flooding of the Landfill and to prevent surface drainage from contacting or percolating through wastes.[a]

22. All Landfill surfaces and working faces shall be graded and operated to minimize rainfall infiltration into wastes, to prevent ponding of water, and to resist erosion. Positive drainage to divert rainfall runoff from areas containing waste shall be provided.

23. Drainage ditches crossing over Landfill areas shall be lined with material which provides an effective field permeability of 1.0×10^{-6} cm/sec or less. If material other than clay or synthetic is used, data must be provided to, and approved by, the Executive Officer. The drainage facilities shall be designed and constructed to accommodate anticipated precipitation and peak surface runoff flows from a 100-year, 24-hour event.

24. Water collected in any storm water catchment basin or a site water treatment facility may be used in minimum amounts necessary for dust-control, compaction, or irrigation of cover vegetation provided none of the water infiltrates past the root zones of vegetation or past a depth where effective evaporation can occur.

25. Waste containment barriers shall be maintained to ensure effectiveness.[a]

26. The Discharger shall monitor potential releases from the site related to surface water runoff by complying with all NPDES Stormwater Monitoring Program requirements.

27. Storage facilities associated with precipitation and drainage control systems shall be emptied immediately following each storm, or otherwise managed, to maintain the design capacity of the system.[a]

28. A minimum of two feet of freeboard shall be maintained in all leachate containment ponds. Leachate ponds shall be designed to avoid overtopping as a result of seiches.[a]

29. If adequate soil cover material is not accessible during inclement weather, such material shall be stockpiled during favorable weather to ensure year-round compliance.[a]

30. **Throughout the rainy season of each year,** a minimum one (1) foot thick compacted soil cover designed and constructed to minimize percolation of precipitation through wastes, shall be maintained over the entire active MWU.[b] The soil cover shall be in-place by **October 1 of each year.** The only exception to this specification is the working face. The working face shall be confined to the smallest area practicable based on the anticipated quantity of waste discharged and required waste management facility operations. Landfill areas which have been provided an Executive Officer approved vegetative layer as of the adoption date of this Order, shall not be required to satisfy this requirement. Based on site specific conditions, the Executive Officer may require a thicker soil cover for any portion of the active WMU prior to the rainy season.

31. By **October 1, of each year,** vegetation shall be planted and maintained over all Landfill slopes within the entire Landfill area to prevent erosion. Vegetation shall be selected to require a minimum of irrigation and maintenance and shall have a rooting depth not in excess of the vegetative layer thickness. Upon Executive Officer approval, non-hazardous sludge may be conditionally utilized as a soil amendment to promote vegetation. Upon written Executive Officer approval, non-hazardous sludge may be conditionally utilized as a soil amendment to promote vegetation. Soil amendments and fertilizers (including wastewater sludge) used to establish vegetation shall not exceed the vegetation's agronomic rates (i.e., annual nutrient needs), unless approved by the Executive Officer.

32. Until the freshwater bypass tunnel is completed, pumping of surface water over the landfill shall be enhanced to minimize ponding in the drainages upgradient of the landfill.

33. A complete liquid mass balance shall be performed for all Units and drainage facilities based on Chapter 15 prescriptive design parameters, and shall be submitted to the Board by **October 15, 1995.**

Design Criteria

34. Waste management units, containment structures, and drainage facilities shall be designed, constructed and maintained to limit, to the greatest extent possible, ponding, infiltration, inundation, erosion, slope failure, washout, overtopping, and damage due to natural disasters (e.g., floods with a predicted frequency of once in 100 years, the maximum probable earthquake, and severe wind storms).[a]

35. Waste management units, containment structures and drainage facilities shall be designed and constructed under the direct supervision of a California Registered Civil Engineer or a Certified Engineering Geologist, and shall be certified by that individual as meeting the prescriptive standards and performance goals of all state and federal landfill regulations including, but not limited to Chapter 15 and 40 CFR Parts 257 and 258, prior to waste discharge.[a,d]

36. All Landfill facilities shall be designed and constructed to minimize damage during the "maximum probable earthquake" to the graded foundation and to structures which control leachate, surface drainage, erosion, and gas. The operator must demonstrate that all containment structures, including liners, leachate collection and removal systems, and surface water control systems are designed to resist the maximum horizontal acceleration in lithified earth material. The owner or operator must place the demonstration in the operating record and notify the Executive Officer that it has been placed in the operating record.

37. The Discharger shall design and build the final slopes to be stable under both static and dynamic conditions considering seismic acceleration at least from the Maximum Probable Earthquake. The slope of those portions of the fill which will be the final exterior surface shall be developed in accordance with California Code of Regulations Chapter 15, Subsection 2581, and the following:

    a. All slopes shall have a minimum of one 15-foot wide bench for every 50 feet of vertical height.

b. Slopes shall not be steeper than a horizontal to vertical ratio of 1.75:1 (57%).

c. Slopes steeper than a horizontal to vertical ratio of 3:1 (33%) shall be supported by a slope stability analysis report approved by the Executive Officer.

d. Slopes with grades less than 3% require the approval of the Executive Officer.

38. Wastes shall not be discharged to areas outside the footprint area which had not received waste as of October 9, 1993, unless the discharge is to an area equipped with a containment system, which meets either **a.** or **b.** below:

a. a composite liner and a leachate collection and removal system. The liner must consist of two components:

i. Lower Component: A minimum two-foot layer of compacted soil with a hydraulic conductivity of no more than $1x10^{-7}$ cm/sec (0.1 feet/year); and

ii. Upper Component: A minimum 40-mil flexible membrane liner (FML) or a minimum 60-mil high density polyethylene (HDPE). The upper component must be installed in direct and uniform contact with the lower component; or

b. an engineered alternative design. Engineered alternative designs must satisfy the performance criteria in 40 CFR, Section 258.40(a)(1) and (c), and satisfy the criteria for an engineered alternative to the above Prescriptive Design, as provided by Chapter 15, Section 2510 (b), where the performance of the alternative composite liners' components, in combination, equal or exceed the waste containment capability of the Prescriptive Design.[d]

39. Permeability determinations shall be as specified in Article 4 of Chapter 15. Permeabilities specified for containment structures other than cover shall be relative to the fluids, including waste and leachate, to be contained. Permeabilities specified for cover shall be relative to water. Permeabilities shall be determined primarily by appropriate field test methods in accordance with civil engineering practice (e.g., sealed double ring infiltrometer test). The results of laboratory tests with both water and leachate, and field tests with water, shall be compared to evaluate how the field permeabilities will be affected by leachate. Appropriate compaction tests may be used in conjunction withlaboratory permeability tests to determine field permeabilities as long as a reasonable number of field permeability tests are also conducted.[a]

40. Leachate collection and removal systems shall be installed immediately above the liner and shall be designed, constructed, maintained, and operated to collect and remove twice the maximum anticipated daily volume of leachate from the Unit.[a]

41. The leachate collection and removal system shall:

a. be designed and constructed to prevent the development of hydraulic head on the liner, and in no case shall the hydraulic head be allowed to exceed one-foot on the liner; and

b. convey to a sump, or other appropriate collection area, all leachate which reaches the liner. The depth of fluid in any collection sump shall be kept at the minimum needed to ensure efficient pump operation.[a]

Closure

42. Final Landfill configuration shall conform to the contours delineated in the most recent version of the Executive Officer approved Master Plan.

43. Areas at final elevations, a maximum of 510 feet above mean sea level at the peak, shall be covered with final cover pursuant to Section 2581 of Chapter 15 including from bottom to top:[a]

I. a. at least a two foot foundation layer placed over waste;

b. (1) for landfills which have <u>not</u> been equipped with a Subtitle D composite liner system, a low permeability geomembrane, compacted clay or an engineered alternative with an in-place permeability no faster than $1x10^{-6}$

cm/sec, or no faster than the permeability of underlying natural geologic materials, which ever is less, or

(2) for landfills which have been equipped with a Subtitle D composite liner system, a low permeability geomembrane or compacted clay with an in-place permeability no faster than $1x10^{-7}$ cm/sec, or no faster than the permeability of the underlying Subtitle D composite liner system; and

c. at least one foot of soil capable of supporting vegetation, resisting erosion, and protecting the underlying low permeability layer.

II. a. an Executive Officer approved engineering alternative that offers an in-place permeability of no faster than $1x10^{-6}$ cm/sec, and

b. at least one foot of soil capable of supporting vegetation, resisting erosion, and protecting the underlying low permeability layer.

Hydraulic conductivity of a low-permeability soil layer shall be determined by both laboratory and in-place field testing. Permeability determinations for cover materials shall be as specified in Article 4 of Chapter 15 and shall be appended to the final closure and post-closure maintenance plan. Construction methods and quality assurance procedures shall be submitted for Board review, and shall insure all parts of the low-permeability layer meet the hydraulic conductivity and compaction requirements. The final cover shall be graded to a slope of at least 3%, but not more than 10% unless adequate erosion control measures are implemented and approved by the Executive Officer.

44. All Landfill areas which have not reached final fill elevation, but will remain inactive over one-year, must be provided with an Executive Officer approved long-term intermediate cover. The thickness and permeability of the long-term intermediate cover shall be based primarily on site specific conditions including, but not limited to length of exposure time; volume of underlying material, permeability, thickness and composition of existing cover; amount of yearly rainfall; depth to ground water; beneficial uses of underlying ground water; site specific geologic and hydrogeologic conditions; and effectiveness of existing monitoring system.

45. The Discharger shall implement final closure activities as the site operation progresses (e.g., within 30 days after a particular Unit or portion of a Unit reaches final fill elevation, final closure activities, consistent with the closure schedule, must be initiated), in accordance with requirements consistent with the closure of the entire site, as approved by the Executive Officer and the CIWMB in accordance with the final closure plan.[a]

46. All closed Landfill WMUs shall be provided with at least two permanent monuments, installed by a licensed land surveyor, from which the location and elevation of all wastes, containment structures, and monitoring facilities can be determined throughout the post-closure maintenance period. Cumulative waste subsidence and settlement of areas where final cover is installed, shall be documented in the annual report.[a]

47. Partial closure shall be accomplished by implementing closure activities, including but not limited to: placement of final cover, final grading, maintenance, revegetation, and installation of environmental monitoring control systems consistent with the approved final closure of the entire site. Units closed in accordance with a Closure Plan approved by the Executive Officer, are not subject to future regulatory changes, unless monitoring data indicate impairment of beneficial uses of ground water.[a]

48. Alternative intermediate and final cover designs may be considered for Executive Officer approval, if such designs provide equivalent reduction in infiltration and protection from wind and water erosion.[a]

49. Methane and other Landfill gases shall be adequately controlled. To prevent nuisance conditions, or the impairment of beneficial uses of water due to migration through the vadose (unsaturated) zone.

50. The surface impoundment area shall be closed in

accordance with a closure plan approved by the Executive Officer.

Reporting

51. Discharger shall notify Board staff, within 24 hours by telephone and within seven days in writing, of any noncompliance potentially or actually endangering health or the environment. Any noncompliance which threatens the Landfill's containment integrity shall be promptly corrected. Correction schedules are subject to the approval of the Executive Officer, except when delays will threaten the environment and/or the Landfill's integrity (i.e., emergency corrective measures). Corrections initiated prior to Executive Officer approval shall be so stated in the written report. The written report shall contain a description of the noncompliance and its cause; the period of noncompliance including exact dates and times or anticipated duration; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance. This provision includes, but is not limited to:

    a. violation of a discharge prohibition;

    b. violation of any treatment system's discharge limitation;

    c. slope failure; and

    d. leachate seep occurring on, or in proximity to, the Landfill.[a]

52. Reports of compliance or noncompliance with, or any progress reports on interim and final requirements contained in any compliance schedule, shall be submitted within 14 days following each scheduled date unless otherwise specified within the Order. If reporting noncompliance, the report shall include a description of the reason, a description and schedule of tasks necessary to achieve compliance, and an estimated date for achieving full compliance. A second report shall be submitted within 14 days of achieving full compliance.

53. Reports shall be submitted in advance of any planned changes in the permitted facility or in an activity which could potentially or actually result in noncompliance.

54. During construction tasks (e.g.: fresh water bypass tunnel, impoundment closure, installation of liners or leachate collection systems, installation of wells to upgrade monitoring systems, preparation of areas to receive waste piles and maintenance of waste piles, etc.) quarterly progress reports shall be submitted to the Board discussing items completed in the previous three months and items planned to be worked on during the next two months. Adequate early notification should be provided to Board staff to allow inspections to be scheduled to verify compliance with approved designs.

C. WATER QUALITY PROTECTION STANDARDS

1. **Water Quality Protection Standard (WQPS or Standard).** The five parts of the Water Quality Protection Standard [Standard] are as follows:

    a. **Constituents of Concern**. The list of Constituents of Concern for water-bearing media [i.e., ground water, surface water, and soil pore liquid]; and soil pore gas,include those described in **Parts I.E.5,** of the attached **MRP NO. 94-62.**

    b. **Concentration Limits**. For each Monitoring Point assigned to the Detection Monitoring Program **[MRP Part I.E.1.]**, the Concentration Limit for each Constituent of Concern [or Monitoring Parameter] shall be its background value as obtained during that Reporting Period as **defined in MRP Part** E.1.a., as described in **Part** I.E.5. of the attached MRP No. 94-62.

    c. **Monitoring Points and Background Monitoring Points for Detection Monitoring** shall be those listed in **MRP Part** I.E.1. and shown on MRP **Attachment** A.

d. Point of Compliance. Point of Compliance means a vertical surface located at the hydraulically downgradient limit of the waste management unit that extends through the uppermost aquifer underlying the unit.

e. Compliance Period. The Compliance Period is the number of years equal to the remaining active life of the waste management unit (including any waste management unit activity prior to the adoption of the waste discharge requirements) plus the closure period. The Compliance Period is the minimum period of time during which the Discharger shall conduct a water quality monitoring program subsequent to a release. Each time the Standard is broken (i.e., a release is discovered), the Unit begins a Compliance Period on the date the Board directs the Discharger to begin an Evaluation Monitoring Program. If the Discharger's Corrective Action Program (CAP) has not achieved compliance with the Standard by the scheduled end of the Compliance Period, the Compliance Period is automatically extended until the Unit has been in continuous compliance for at least three consecutive years.

2. The Detection Monitoring Parameters for (ground water, surface water, perched zone, or soil-pore liquid) samples; and VOC_{water}, a composite parameter that encompasses a variety of constituents (VOC), include those listed in MRP Part I.E.3..

3. The Detection Monitoring Parameters for soil pore gas samples; and VOC_{spg}, a composite parameter that encompasses a variety of gaseous-phase VOCs include those listed in MRP Part I.E.3..

4. Upon adoption of this Order, the Discharger shall, install any additional ground water, soil pore liquid, soil pore gas, or leachate monitoring devices required to fulfill the terms of any Discharge Monitoring Program issued by the Executive Officer.

5. Additional Requirements

a. The concentrations of indicator parameters or waste constituents in water passing through the "Detection" Points of Compliance shall not exceed the "Water Quality Protection Standard(s)" established pursuant to MRP No. 94-62.

b. Discharge of waste shall not cause a "statistically significant" increase over background for any of the constituents of concern or monitoring parameters listed in Appendix I and II of Subtitle D.

c. Discharge of waste shall not cause a violation of any applicable water quality standard for receiving waters adopted by the Board or the State Water Resources Control Board.

d. Discharge of waste shall not cause concentrations of chemicals and radionuclides in underlying and downgradient ground water to exceed limits set forth in Title 22, Chapter 15, Articles 4 and 5 of the code.

e. Discharge of waste shall not adversely impact the quality of water in any aquifer.

f. Discharge of waste shall not cause ground water in downgradient wells to exceed the State Department of Health Services latest recommended Drinking Water Action Levels or Maximum Contaminant Levels.

D. PROVISIONS

General Provisions

1. Order No. 91-21 "Waste Discharge Requirements for City of Santa Cruz Class III Landfill," adopted by the Board on February 15, 1991, is hereby rescinded.

2. The Discharger shall comply with "Monitoring and Reporting Program No. 94-62", as specified by the Executive Officer.

3. The Discharger shall maintain a copy of this Order at the facility and make it available at all times to regulatory agency personnel and to facility operating personnel, who shall be familiar with its contents.

4. The Discharger shall comply with all other applicable provisions of Chapter 15 and Subtitle D that are not specifically referred to in this Order. If any applicable regulation requirements overlap or conflict in any manner, the most restrictive requirement shall govern in all cases, unless specifically stated otherwise in this Order, or as directed by the Executive Officer.

5. The Discharger shall maintain legible records of the volume and type of each waste discharged at each Unit and the manner and location of discharge. Such records shall be maintained at the facility until the beginning of the post-closure maintenance period. These records shall be available for review by representatives of the Board and of the State Water Resources Control Board at any time during normal business hours. At the beginning of the post-closure maintenance period, copies of these records shall be sent to the Board.[a]

6. The Discharger shall be responsible for accurate waste characterization, including determinations of whether or not wastes will be compatible with containment features or other wastes and whether or not wastes are required to be managed as hazardous wastes.[a]

7. A list of the general types of the more widely used names of hazardous-type wastes prohibited at this site shall be posted on a legible roadway sign at the entrance in both English and Spanish. The sign shall also state the locations of the nearest hazardous waste disposal sites and shall list penalties for illegal dumping. A specific list of Hazardous Wastes and other types of materials prohibited at the Landfill shall be provided to commercial waste haulers and shall be available to all other site users upon request.

8. The Board considers the property owner and Discharger to have a continuing responsibility for correcting any problems which may arise in the future as a result of this waste discharge.

9. The landowner and the Discharger shall have a continuing responsibility to assure protection of usable waters, from discharged wastes and from gases and leachate generated by discharged waste, during the Landfills active life, closure, and post-closure maintenance periods and during subsequent use of the property for other purposes.

10. The Discharger or persons employed by the Discharger shall comply with all notice and reporting requirements of the State Department of Water Resources with regard to the construction, alteration, destruction, or abandonment of all monitoring wells used for compliance with this Order or with MRP No. 94-62, as required by Sections 13750 through 13755 of the California Water Code.[d]

11. The Discharger shall notify the Board in writing of any proposed change in ownership or responsibility for construction or operation of the facility. This notification shall be given at least 90 days prior to the effective date of the change and shall be accompanied by an amended Report of Waste Discharge and any technical documents that are needed to demonstrate continued compliance with this Order. In the event of any change in ownership of this waste management facility, the Discharger shall notify the succeeding owner or operator, in writing, of the existence of this Order. A copy of that notification shall be sent to the Board. Notification to the Board shall also comply with Section 2590(c) of Chapter 15.[a]

12. To assume operation under this Order, the succeeding owner or operator must apply in writing to the Executive Officer requesting transfer of the Order. The request must contain the requesting entity's full legal name, the state of incorporation if a corporation, the name and address and telephone number of the persons responsible for contact with the Board, and a statement indicating that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a violation of Section 13264 of the Water Code (discharge without waste discharge requirements). Transfer shall be approved or disapproved in writing by the Executive Officer.[e]

13. Within 60 days after completing final closure of all MSW landfill Units,

    a. the owner or operator must record a notation on the deed to the Landfill facility property, or some other instrument that is normally examined during title search, and notify the Executive Officer that the notation has been recorded and a copy has been placed in the operating record.

    b. the notation on the deed must in perpetuity notify any potential purchaser of the property that:

        i. the land has been used as a landfill facility; and

        ii. its use is restricted pursuant to Subtitle D, section 258.61(c)(3).

    c. Pursuant to Chapter 15, should the Discharger default in post-closure care, liability shifts to the new owner/operator.[a,c]

14. The Discharger shall submit to the Board and the California Integrated Waste Management Board for approval an updated closure and post-closure maintenance plan (Closure Plan) by October 15, 1995 including detailed final closure plans for the impoundment area. The Closure Plan shall describe the methods and controls to be used to assure protection of the quality of surface and ground waters of the area during partial and final closure operations and during any proposed subsequent use of the land. The Closure Plan must include:

    a. a description of the final cover, designed in accordance with all applicable State and Federal regulations and the methods and procedures to be used to install the cover;

    b. an estimate of the largest area of the Landfill Unit ever requiring a final cover at any time during the active life;

    c. an estimate of the maximum inventory of wastes ever on-site over the active life of the Landfill facility;

    d. a schedule for completing all activities necessary to satisfy all closure criteria as required by Chapter 15, Title 14, and Subtitle D regulations;

    e. an estimate of closure and post closure maintenance costs;

    f. a proposal for a trust fund or equivalent financial arrangement to provide sufficient funding for closure and post-closure maintenance; and

    g. the amount to be deposited in the trust fund or equivalent financial arrangement each year.

    The Closure Plan shall be prepared by or under the supervision of a California registered civil engineer or certified engineering geologist. Updates of the plan are required whenever substantial changes occur or five years has elapsed since the last major revision. The method, identified for each Units' closure and protection of the quality of surface and ground waters, shall comply with waste discharge requirements established by the Board. The Closure Plan report shall be consistent with all applicable State and Federal regulations, including Chapter 15 and Subtitle D.[a,c]

15. The Discharger shall notify the Board at least 180 days prior to beginning any partial or final landfill closure activities. The notice shall include a statement that all closure activities will conform to the most recently approved Closure Plan and that the Plan provides for closure in compliance with all applicable state and federal regulations. If there is no approved Closure Plan, the Discharger must submit a complete Closure Plan at least 240 days prior to beginning any Landfill closure activities.[a,b]

16. The Executive Officer may require partial and/or final closure of any WMU regardless of whether such WMU has reached final capacity laterally and/or vertically for the protection of water quality. Such a requirement will be requested in writing.[a]

17. The Discharger shall report all changes in usage of daily cover and performance standards within 10 days following the change.

18. The Discharger shall maintain waste containment facilities and precipitation and drainage controls, and shall continue to monitor, as appropriate, ground water, leachate from the Unit, the vadose zone, and surface waters per the current version of the MRP throughout the post-closure maintenance period.[a]

19. The post-closure maintenance period shall continue until the Regional Board determines that remaining wastes in the Landfill will not threaten water quality.[a]

20. Discharger shall immediately notify the Regional Board of any flooding, equipment failure, slope failure, or other change in site conditions which could impair the integrity of waste containment facilities or of precipitation and drainage control structures.

21. At any time, the Discharger may file a written request (including appropriate supporting documents) with the Executive Officer, proposing appropriate modifications to the MRP. The request may address changes (a) to any statistical method, non-statistical method, or retest method used with a given constituent or parameter, (b) to the manner of determining the background value for a constituent or parameter, (c) to the method for displaying annual data plots, (d) to the laboratory analytical method used to test for a given constituent or parameter. (e) to the media being monitored [e.g., the addition of soil pore gas to the media being monitored], (f) to the number or placement of Monitoring Points or Background Monitoring Points for a given monitored medium, or (g) to any aspect of monitoring or QA/QC. After receiving and analyzing such a report, the Executive officer either shall reject the proposal for reasons listed, or shall incorporate it, along with any necessary changes, into the MRP. The Discharger shall implement any changes proposed by the Executive Officer upon receipt of a revised MRP.

22. The Discharger shall submit a complete liner system design report for Executive Officer consideration of any new WMU use and construction, at least 180 days prior to WMU development. The design report shall adequately address any proposed deviation from the most currently approved fill sequencing plan. It must adequately address **all** applicable requirements of state (Chapter 15) and Federal (Subtitle D) landfill regulations.[a]

23. Vertical expansions (i.e., additional refuse placement on top of existing **unlined** WMUs already containing refuse) above currently permitted final fill elevations (for this site, a maximum peak of 510 feet above MSL), as indicated in the most recently approved operations/master plan or WDRs, will not be permitted, **unless** The Discharger submits and the Executive Officer approves, a proposal demonstrating that additional refuse placed on top of existing unlined WMUs does not significantly increase the threat to water quality. The proposal shall adequately address:

    a. all siting criteria and engineering properties of underlying refuse,

    b. differential settlement, including the ability of the underlying waste to support the additional refuse and all effects of the additional refuse upon the underlying refuse.

    All proposal conclusions shall consider site specific conditions, including subsurface hydrogeologic factors, existing threat to water quality, any existing State Water's degradation as a result of WMU waste discharges, beneficial uses of underlying and adjacent waters, size of the existing WMU, remaining capacity, existing and proposed final fill elevations, financial feasibility, and any other relevant factors.

24. Pursuant to the California Code of Regulations, Title 23, Chapter 15, Article 9, the Discharger must submit a technical report to the Executive Officer not later than **March 30, 1999** from adoption of this Order] which:

    a. discusses whether there has been or will be changes in the continuity, character, location, or volume of the discharge;

a. include a Fill Sequencing Plan, including detailed maps. The Fill Sequencing Plan should describe in detail the overall development of the entire Landfill .

b. include a detailed description of the lateral and vertical extent of refuse within all existing Modules. It must include an accurate estimate of waste volumes within each existing Landfill module and an approximation of the remaining volume and years of capacity for each existing module and all new proposed modules within currently permitted Landfill boundaries. It must also describe all existing available space within currently permitted Landfill areas (i.e., modules where refuse has been placed in the past, but have not reached final permitted elevation and modules or portions of modules where refuse has never been placed).

c. discuss any plans/proposals to close or partially close any modules or portions of modules, any proposed liner systems and respective design components, any proposed plans for long-term intermediate cover for Landfill areas which may remain inactive for long periods of time.

32. The Discharger shall develop a long-term intermediate cover design for all Landfill areas which have not reached final fill elevation, but will remain inactive for over one year. Cover designs shall minimize percolation from precipitation and surface water flows. The proposed design shall be submitted by **August 31, 1995**, for Executive Officer approval. Executive Officer approval of the design will be based on site specific factors as described in **Discharge Specification B.44.**

33. The Discharger must submit a 'Wet Weather Preparedness Report' by **November 1, of each year.** The report must address, in detail, compliance with all wet weather preparedness related specifications (e.g., **Discharge Specifications B.21, B.22, B.23, B.29, B.30, and B.31**) of this Order, and all other relevant Chapter 15 Subtitle D criteria.

34. If the Discharger or the Board determines, pursuant to Section 2550.8(g) or (i), that there is evidence of a new release from any portion of the Landfill, the Discharger shall immediately implement the procedures outlined in M&RP, Part 94-62.

35. The City of Santa Cruz (i.e., by adoption of a Resolution) shall appropriate $2.75 million to a Financial Assurance Instrument (Instrument) to cover the estimated Article 5 costs to initiate and complete corrective action of the "worst case" reasonably foreseeable release. The total appropriated amount is provided in the "Amended Report of Waste Discharge" which is presented in the support document for the June 1992 ROWD. The total costs include: to cover corrective action program costs; to cover evaluation monitoring program costs; and to cover annual testing, operation and maintenance costs. The Discharger shall submit a report every year that either validates the Instrument's ongoing viability or proposes and substantiates any needed changes.[a,c] Should the Discharger adequately demonstrate in the Instrument viability report that funding for the Financial Assurance is either inadequate or contains more funds than reasonably required, the Discharger shall, at the Executive officers direction, increase or decrease instrument funding by that amount.

REPORT DUE DATES: The report is due by **February 28, 1995** and an update report is then due every January 30 thereafter.

36. By **February 28, 1995**, the Discharger shall submit a signed original Financial Assurance Instrument for corrective actions as outlined in **Provision D.35**, above, for Executive Officer review.

37. Any person failing or refusing to furnish technical or monitoring program reports as required by subdivision (b) of section 13267 of the California Water Code, or falsifying any information provided therein, is guilty of a misdemeanor.[d]

51. The Discharger shall comply with the following submittal and implementation schedule for all tasks and/or reports required by this order:

REPORT AND IMPLEMENTATION DATE SUMMARY

TASK	IMPLEMENTATION DATE
Runoff diversion and erosion prevention [Specification No. 21]	October 1, of each year
Minimum One foot cover over entire active WMU [Specification No. 30]	October 1, of each year
Vegetation placement over entire Landfill area [Specification No. 31]	October 1, of each year
REPORT	**DUE DATE**
Wet Weather Preparedness Report [Provision No. 33]	November 1, of each year
Technical Compliance Report [Provision No. 25]	January 1, 1995
Load Checking Program [Provision No. 29]	December 1, 1994
Enhanced Financial Assurance Agreement Documents [Provision No. 36]	February 28, 1995
Update [Provision No. 35]	February 28, 1995
Liquid Mass Balance Report [Specification No. 33]	October 15, 1995
Long-Term Intermediate Cover Design Report [Provision No. 32]	August 15, 1995
Updated Closure Plan [Provision No. 14]	October 15, 1995 due 5 YEARS ~~yearly updates due January 30, 1996~~ FROM LAST
Updated Master Plan [Provision No. 31]	October 15, 1995
Technical Report [Provision No. 24]	March 30, 1999
Enhanced Financial Assurance Report [Provision No. 35]	February 28, 1995 yearly updates due January 30
Complete Seismic Slope Stability Report [Provision No. 45]	October 15, 1995
Complete slope repairs based on approved Stability Report [Provision No. 46]	October 15, 1996
Implement Interim Phase I MRP No. 94-62 [Provision No. 39]	November 18, 1994
Submit Enhanced Evaluation Monitoring Plan [Provision No. 40]	April 28, 1995

Fully implement enhanced Interim Detection and enhanced Evaluation Monitoring programs [Provision No. 41]	August 15, 1995
Submit complete plume detection report (including vadose zone monitoring implementation) [Provision No. 41]	August 15, 1996
Submit design report for proposed lined cell [Provision No. 42]	October 15, 1995
Completed lined cell construction [Provision No. 43]	June 30, 1996
Close by removal all unlined leachate ponds [Provision No. 44]	October 15, 1996
Submit complete Site Hydrogeologic Characterization Report Phase II detection Monitoring Program Plan [Provision No. 47]	August 15, 1996
Implement Phase II detection Monitoring Plan [Provision No. 48]	October 15, 1996
Submit Spring Cutoff/Dewatering Feasibility Study [Provision No. 49]	February 15, 1997
Complete proper well abandonment of damaged wells (e.g., W-5 and W-6) [Provision No. 50]	October 15, 1996

I, ROGER W. BRIGGS, Executive Officer, of the California Regional Water Quality Control Board, Central Coast Region, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Coast Region on November 18, 1994.

ORDERED BY: _____
Executive Officer

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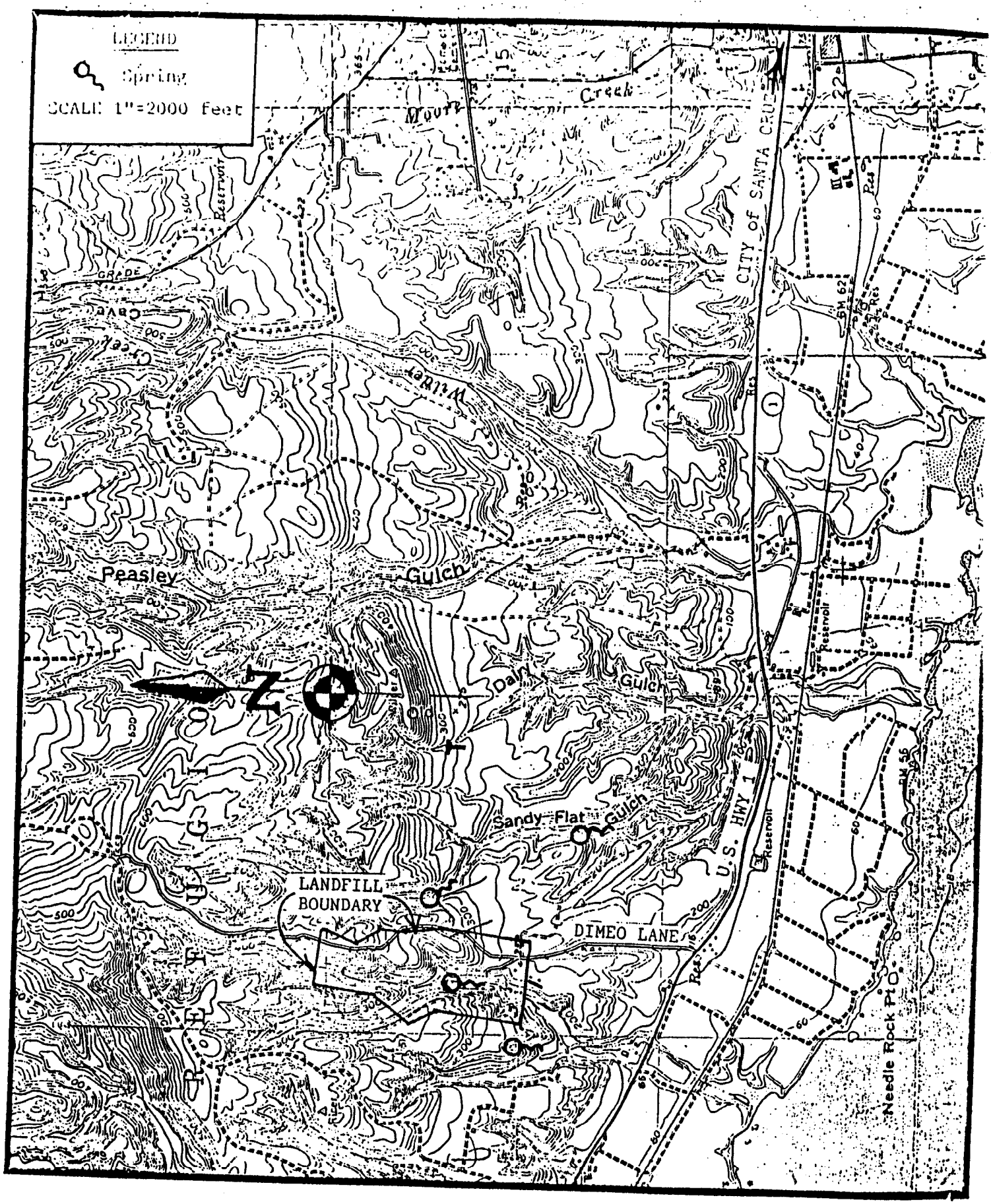

ATTACHMENT 1

SANTA CRUZ CITY

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION

81 Higuera Street, Suite 200
San Luis Obispo, California 93401-5427

MONITORING AND REPORTING PROGRAM NO. 94-62
(INTERIM)

FOR

SANTA CRUZ CITY
CLASS III LANDFILL
SANTA CRUZ COUNTY

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PART I: MONITORING AND OBSERVATION SCHEDULE

Unless otherwise indicated all required monitoring and observations shall be reported in the Detection Monitoring Report and/or the Annual Summary Report, as outlined in Part IV of this Monitoring and Reporting Program .

A. SITE INSPECTIONS

The Discharger shall inspect the Landfill, in accordance with the following schedule, recording, at a minimum, the Standard Observations as defined in Part V.

Site Inspection Schedule:

1. during the wet season (October through April), following each storm which produces storm water discharge, with inspections performed at least monthly

2. during the dry season a minimum one inspection each Monitoring Period

B. INTAKE MONITORING

The Discharger shall maintain a daily record of the waste stream. The record shall include the following:

1. weight and volume of waste received;

2. running totals of volume received, volume remaining for waste placement, and site life expectancy;

3. current fill area;

4. waste type and diversion quantities; and

5. log of random load checking program. The log shall contain a record of refused loads, including the type of waste refused,and the date, name, address, and phone number of the party attempting to dispose of the waste.

C. LEACHATE AND DRAINAGE SYSTEMS INSPECTIONS

The Discharger shall inspect all leachate systems and record the following information:.

1. Monthly; leachate containment system integrity, record volume of leachate collected and disposal method used;

2. Quarterly; pumping system operational check;

3. Annually; leachate collection and removal system testing as required by Chapter 15, Article 4, §2543(d), reporting the results as part of the Annual Summary Report required by Part IV.B. of this Monitoring and Reporting Program. During the annual inspection, particular attention shall be given to identifying evidence of biofouling. The absence or presence of biofouling shall be addressed in the inspection report.

Additionally the Discharger shall inspect all drainage control systems following each storm and record the following information:

1. whether storm storage basins and drainage ditches contain liquids;

2. any apparent seepage from storage basins;

3. general conditions of facilities and liners; and

4. steps taken to correct any problems found during inspection and when taken.

D. RAINFALL DATA

The Discharger shall record the following information;

1. total precipitation during the Monitoring Period;

2. precipitation during the most intense twenty-four hour interval of the Monitoring Period and

3. return rating of most intense storm [25 year, 100 year, and so on].

B. Soil Pore Gas Monitoring

The Discharger shall monitor the soil pore gas and unsaturated zone gas at all monitoring locations for the following monitoring parameters:

VOC
Methane
Hydrogen Sulfide

4. Ground Water Flow Rate and Direction

For each monitored ground water body, the Discharger shall measure the water level in each well before purging, at least quarterly, including the times of expected highest and lowest elevations of the water level, and determine the presence of vertical gradients, and ground water flow rate and direction for the respective ground water body. Ground water elevations for all wells in a given ground water body shall be measured within a period of time short enough to avoid temporal variations in ground water flow which could preclude accurate determination of ground water flow rate and direction (40 CFR §258.53(d)). The Discharger shall compare observed ground water characteristics with those from previous determinations, noting the appearance of any trends and of any indications that a change in the hydrogeologic conditions beneath the site has occurred. This information shall be reported in the Detection Monitoring Report required under Part IV.A. of this Monitoring and Reporting Program.

5. Constituents of Concern (COC)

All COCs are included in Appendix II to 40 CFR, Part 258. Monitoring for COCs shall encompass all listed Constituents of Concern and all Monitoring Parameters.

6. Thirty-Day Sample Procurement Limitation

For any given monitored medium, the samples taken from all Monitoring Points and Background Monitoring Points to satisfy the data analysis requirements for a given Monitoring Period shall all be taken within a span not exceeding 30 days, and shall be taken in a manner that insures sample independence to the greatest extent feasible [§2550.7(e)(12)(B) of Article 5].

6. Unknown chromatographic peaks shall be reported, along with an estimate of the concentration of the unknown analyte. When unknown peaks are encountered, second column or second method confirmation procedures shall be performed to attempt to identify and more accurately quantify the unknown analyte.

7. In cases where contaminants are detected in QA/QC samples (i.e., field, trip, or lab blanks), the accompanying sample results shall be appropriately flagged.

8. The Method Detection Limit shall always be calculated such that it represents a concentration associated with a 99% reliability of a non-zero result.

B. CONCENTRATION LIMITS

The concentration limit for any given Constituent of Concern or Monitoring Parameter in a given monitored medium shall be the constituent's background value, established anew during each Monitoring Period using only data from all samples collected during that Monitoring Period from the Background Monitoring Points for that monitored medium. The background value shall be either:

1. the mean (or median, as appropriate) and standard deviation (or other measure of central tendency, as appropriate) of the constituent's background data; or

2. the constituent's Method Detection Limit, in cases where the constituent's Method Detection Limit is exceeded in less than 10% of the historical samples.

C. INITIAL BACKGROUND DETERMINATION

For the purpose of establishing an initial pool of background data for each Constituent of Concern and each Monitoring Parameter at each Background Monitoring Point in each monitored medium the Discharger shall:

1. Collect at least one sample quarterly for at least one year from each Background Monitoring Point in each monitored medium and analyze for all newly-added Constituent(s) of Concern and Monitoring Parameter(s), including any added by the adoption of this Order; and

2. Sample new Background Monitoring Points, including any added by this Order, at least quarterly for at least one year, analyzing for all Constituents of Concern and Monitoring Parameters.

Once this reference set of background data is collected, the Discharger shall include it as a separate identified item in the ensuing monitoring report submittal.

D. RECORDS TO BE MAINTAINED

Written records shall be maintained by the Discharger or laboratory, and shall be retained for a minimum of five years. This period of retention shall be extended during the course of any unresolved litigation regarding this discharge or when requested by the Board. Such records shall show the following for each sample:

1. Identity of sample and of the Monitoring Point or Background Monitoring Point from which it was taken, along with the identity of the individual who obtained the sample;

2. Date and time of sampling;

3. Date and time that analyses were started and completed, and the name of the personnel performing each analysis;

4. Complete procedure used, including method of preserving the sample, and the identity and volumes of reagents used;

5. Calculation of results; and

6. Results of analyses, and the Method Detection Limit and Practical Quantitation Limit for each analysis.

b. The Chi-Square statistic of standardized residuals exceeds a critical value calculated at the 5% confidence level with the degrees of freedom defined as the number of monitoring points minus three.

c. The Bartlett's statistic for equal variances exceeds a critical value calculated at the 5% confidence level with the degrees of freedom defined with the number of monitoring points minus one.

If the use of the Natural Logs normalize the data (coefficient of variation < 1, Chi-Square < Chi-Square calculated critical value, and Bartlett's statistic < Bartletts' critical value) then ANOVA is the statistical procedure of choice and is completed, in accordance with Part III.B.1. above, using the modified database;]

3. One-Way Non-Parametric ANOVA (Kruskal-Wallis Test), followed by multiple comparisons

This method requires at least nine independent samples from each Monitoring Point and Background Monitoring Point; therefore, the Discharger shall anticipate the need for more samples per Monitoring Point, based upon past monitoring results. The method shall be used for constituents which are historically detected in background at least 50% of the time but less than 85% of the time. The ANOVA shall be carried out at the 95% confidence level. Following the ANOVA, the data from each downgradient Monitoring Point shall be tested at a 99% confidence level against the pooled background data. If these multiple comparisons cause the Null Hypothesis to be rejected at any Monitoring Point, the Discharger shall conclude that a release is tentatively indicated for that constituent and shall immediately implement the appropriate retest procedure under Part III.D.; or

4. Method of Proportions

This method shall be used for constituents which are historically detected in background at least 10% of the time but less than 50% of the time. This method requires:

a. at least nine downgradient data points per Monitoring Point per Monitoring Period;

b. at least thirty data points in the combined data set; and

c. that n * P > 5 (where n is the number of data points in the combined data set and P is the proportion of the combined set that exceeds the Method Detection Limit);

Therefore, the Discharger shall anticipate the number of samples required, based upon past monitoring results. The test shall be carried out at the 99% confidence level. If the analysis results in rejection of the Null Hypothesis, the Discharger shall conclude that a release is tentatively indicated for that constituent or parameter, and shall immediately implement the appropriate retest procedure under Part III.D.; or

C. NON-STATISTICAL METHOD

The Discharger shall use the following non-statistical method for analyzing all constituents which are detected in less than 10% of applicable background samples. Background shall be established in accordance with Part II.C. of this Monitoring and Reporting Program. This method involves a two-step process:

1. From all constituents to which the method applies, compile a list of those constituents which exceed their respective Method Detection Limit (Method Detection Limit) in the downgradient sample of a given Monitoring Point then;

PART IV: REPORTING

A. GENERAL

A written Detection Monitoring Report shall be submitted quarterly in accordance with the Monitoring Period dates defined in Part V.H. of this Monitoring and Reporting Program. The Discharger shall submit a report concerning the analysis of all Constituents of Concern each time the analysis is carried out in accordance with this Monitoring and Reporting Program. All reports, required under this section, shall be submitted no later than thirty days following the end of their respective Monitoring Period. All reports shall be comprised, as appropriate, of at least the following:

1. Letter of Transmittal

   A letter transmitting the essential points shall accompany each report. Such a letter shall include a discussion of any violations found since the last such report was submitted, and shall describe actions taken or planned for correcting those violations. If the Discharger has previously submitted a detailed time schedule for correcting said requirement violations, a reference to the correspondence transmitting such schedule will be satisfactory. If no violations have occurred since the last submittal, this shall be stated in the letter of transmittal. Monitoring reports and the letter transmitting the monitoring reports shall be signed by a principal executive officer at the level of vice president or above, or by his/her duly authorized representative, if such a representative is responsible for the overall operation of the facility from which the discharge originates. The letter shall contain a statement by the official, under penalty of perjury, that to the best of the signer's knowledge the report is true, complete, and correct.

2. Compliance Evaluation Summary

   The summary shall contain at least:

   a. For each monitored ground water body, a description and graphical presentation of the velocity and direction of ground water flow under/around the Unit, based upon water level elevations taken during the collection of the water quality data submitted in the report.

   b. For each monitoring well addressed by the report: a description of the method and time of water level measurement, the type of pump used for purging and the placement of the pump in the well, and the method of purging (the pumping rate, the equipment and methods used to monitor field pH, temperature, and conductivity during purging, the calibration of the field equipment, results of the pH, temperature, conductivity, and turbidity testing, the well recovery time, and the method of disposing of the purge water).

   c. For each Monitoring Point and Background Monitoring Point addressed by the report, a description of the type of pump, or other device, used, its placement for sampling, and a description of the sampling procedure (number of samples, field blanks, travel blanks, and duplicate samples taken; the type of containers and preservatives used; the date and time of sampling; the name and qualifications of the person actually taking the samples; description of any anomalies).

   d. Discussion of the Post-Sampling Purge method in accordance with Chapter 15 [§2550.7(e)(12)(B) of Article 5].

2. Analytical Data

All monitoring analytical data obtained during the previous year, presented in tabular form as well as on 3.5" diskettes, in MS-DOS/ASCII format or in another file format acceptable to the Executive Officer. The Board regards the submittal of data in hard copy and on diskette as "...the form necessary for..." statistical analysis [§2550.8(h) of Article 5], in that this facilitates periodic review by the Board's statistical consultant. Additionally complete data histories of each well shall be submitted in hard copy form or on diskette.

3. Leachate Results

Results of annual leachate system testing as required by §2543(d) of Article 5.

4. Discussion

A comprehensive discussion of the compliance record, the result of any corrective actions taken or planned which may be needed to bring the Discharger into full compliance with the waste discharge requirements, and progress of the cleanup operation. A summary of the ground water and surface water analyses, indicating any changes made since the previous annual report.

5. Map

A map showing the areas where filling has taken place during the previous calendar year. Indicate areas, if any, in which filling has been completed or intermediate cover has been placed.

C. CONTINGENCY RESPONSE

1. Leachate Seep

The Discharger shall, within 24 hours report by telephone concerning the discovery any previously unreported seepage from the disposal area. A written report shall be filed with the Board within seven days, containing at least the following information:

a. Map;—A map showing the location(s) of seepage;

b. Flow rate;—An estimate of the flow rate;

c. Description;—A description of the nature of the discharge (e.g., all pertinent observations and analyses); and

d. Corrective measures; approved (or proposed for consideration) by the Regional Water Board Executive Officer.

2. Response to an Initial Indication of a Release

Should the initial statistical or non-statistical comparison (under Part III. B. or C. of this Monitoring and Reporting Program) indicate that a release is tentatively identified, the Discharger shall;

a. within 24 hours, notify their designated Regional Water Board staff contact verbally as to the Monitoring Point(s) and constituent(s) or parameter(s) involved;

b. provide written notification by certified mail within seven days of such determination; and

(1) Meets the requirements of 23CCR §2550.8(k)(5) and 23 CCR §2550.9, and

(2) Satisfies the requirements of 40 CFR §258.55(g)(1)(ii) by committing to install at least one monitoring well at the facility boundary directly downgradient of the center of the release, immediately after delineating the nature and extent of the release under 23 CCR §2550.9(b);

c. The Discharger shall, within 180 days of discovering the release, submit a preliminary engineering feasibility study meeting the requirements of 23 CCR §2550.8(k)(6); and

d. The Discharger shall immediately begin delineating the nature and extent of the release by installing and monitoring assessment wells as necessary to assure that the Discharger can meet the requirement [under 23 CCR §2550.9(b)] to submit a delineation report within 90 days of when the Board directs the Discharger to begin the Evaluation Monitoring and Reporting Program. This report shall show the vertical and horizontal limits of the release for all Constituents of Concern. This delineation effort shall be carried out in addition to any ongoing Monitoring and Reporting Program (e.g., Detection Monitoring and Reporting Program); nevertheless, the Discharger's delineation effort shall encompass all relevant monitoring data.

5. Release Beyond Facility Boundary

Any time the Discharger concludes (or the Board Executive Officer directs the Discharger to conclude) that a release from the Unit has proceeded beyond the facility boundary, the Discharger shall so notify all persons who either own or reside upon the land that directly overlies any part of the plume (Affected Persons).

a. Initial notification to Affected Persons shall be accomplished within 14 days of making this conclusion and shall include a description of the Discharger's current knowledge of the nature and extent of the release.

b. Subsequent to initial notification, the Discharger shall provide updates to all Affected Persons, including any persons newly affected by a change in the boundary of the release, within 14 days of concluding there has been any material change in the nature or extent of the release.

c. Each time the Discharger sends a notification to Affected Persons (under a. or b., above), the Discharger shall, within seven days of sending such notification, provide the Board with both a copy of the notification and a current mailing list of Affected Persons.

PART V: DEFINITION OF TERMS

A. AFFECTED PERSONS

All individuals who either own or reside upon the land that directly overlies any part of that portion of a gas- or liquid-phase release that has migrated beyond the facility boundary.

B. CONSTITUENTS OF CONCERN (COC)

Those constituents which are likely to be in the waste in the Unit or which are likely to be derived from waste constituents, in the event of a release. The Constituents of Concern for this Unit are listed in Part I.E.5.

C. FACILITY-SPECIFIC METHOD DETECTION LIMIT (METHOD DETECTION LIMIT)

The lowest concentration at which a given laboratory, using a given analytical method, to detect a given constituent, (in spite of any Matrix Effect) can regularly differentiate, with 99% reliability, between a sample which contains the constituent and one which does not.

D. FACILITY-SPECIFIC PRACTICAL QUANTITATION LIMIT (PRACTICAL QUANTITATION LIMIT)

The lowest constituent concentration a given laboratory, using a given analytical method, to determine the concentration of a given constituent (in spite of any Matrix Effect), can regularly quantify within specified limits of precision acceptable to the Executive Officer.

E. MATRIX EFFECT

Any increase in the Method Detection Limit or Practical Quantitation Limit for a given constituent as a result of the presence of other constituents, either of natural origin or introduced through a release, that are present in the sample being analyzed.

F. MONITORED MEDIA

Those water bearing media that are monitored pursuant to this Monitoring and Reporting Program. The Monitored Media may include: (1) ground water in the uppermost aquifer, in any other portion of the zone of saturation (§2601 of Chapter 15) in which it would be reasonable to anticipate that waste constituents migrating from the Unit could be detected, and in any perched zones underlying the Unit, (2) any bodies of surface water that could be measurably affected by a release, and (3) soil pore liquid beneath and/or adjacent to the Unit.

G. MONITORING PARAMETERS

A short list of constituents and parameters used for the majority of monitoring activity. The Monitoring Parameters for this Unit are listed in Part I.E.3. of this Monitoring and Reporting Program.

H. MONITORING PERIOD

The database duration separating the submittal of a monitoring report and the time of the next report submittal. The Monitoring Period for analysis of all Constituents of Concern s five years; the Monitoring Period for the Monitoring Parameters is quarterly]. Quarterly monitoring will be performed within the following time frames: [Winter (January 1 to March 31), Spring (April 1 to June 30), Summer (July 1 to September 30), Fall (October 1 to December 31)]. The due date for any given report will be 30 days after the end of its Monitoring Period, unless otherwise stated.

I. STANDARD OBSERVATIONS

1. For Receiving Waters;

   a. Floating and suspended materials of waste origin; presence or absence, source, and size of affected area;

b. Discoloration and turbidity; description of color, source, and size of affected area;

c. Evidence of odors; presence or absence, characterization, source, and distance of travel from source.

d. Evidence of beneficial use; presence of water-associated wildlife.

e. Flow rate to the receiving water.

2. Along the perimeter of the Unit:

a. Evidence of liquid leaving or entering the Unit, estimated size of affected area, and flow rate (show affected area on map).

b. Evidence of odors; presence or absence, characterization, source, and distance of travel from source.

c. Evidence of erosion and/or of exposed refuse.

d. Inspection of all storm water discharge locations for evidence of non-storm water discharges during dry seasons, and integrity during wet seasons.

3. For the Unit:

a. Evidence of ponded water at any point on the waste management facility (show affected area on map).

b. Evidence of odors; presence or absence, characterization, source, and distance of travel from source.

c. Evidence of erosion and/or of daylighted refuse.

d. Compliance with Storm Water Pollution Prevention Plan, insuring that the terms of the general permit are properly implemented.

e. Integrity of all drainage systems

J. RECEIVING WATERS

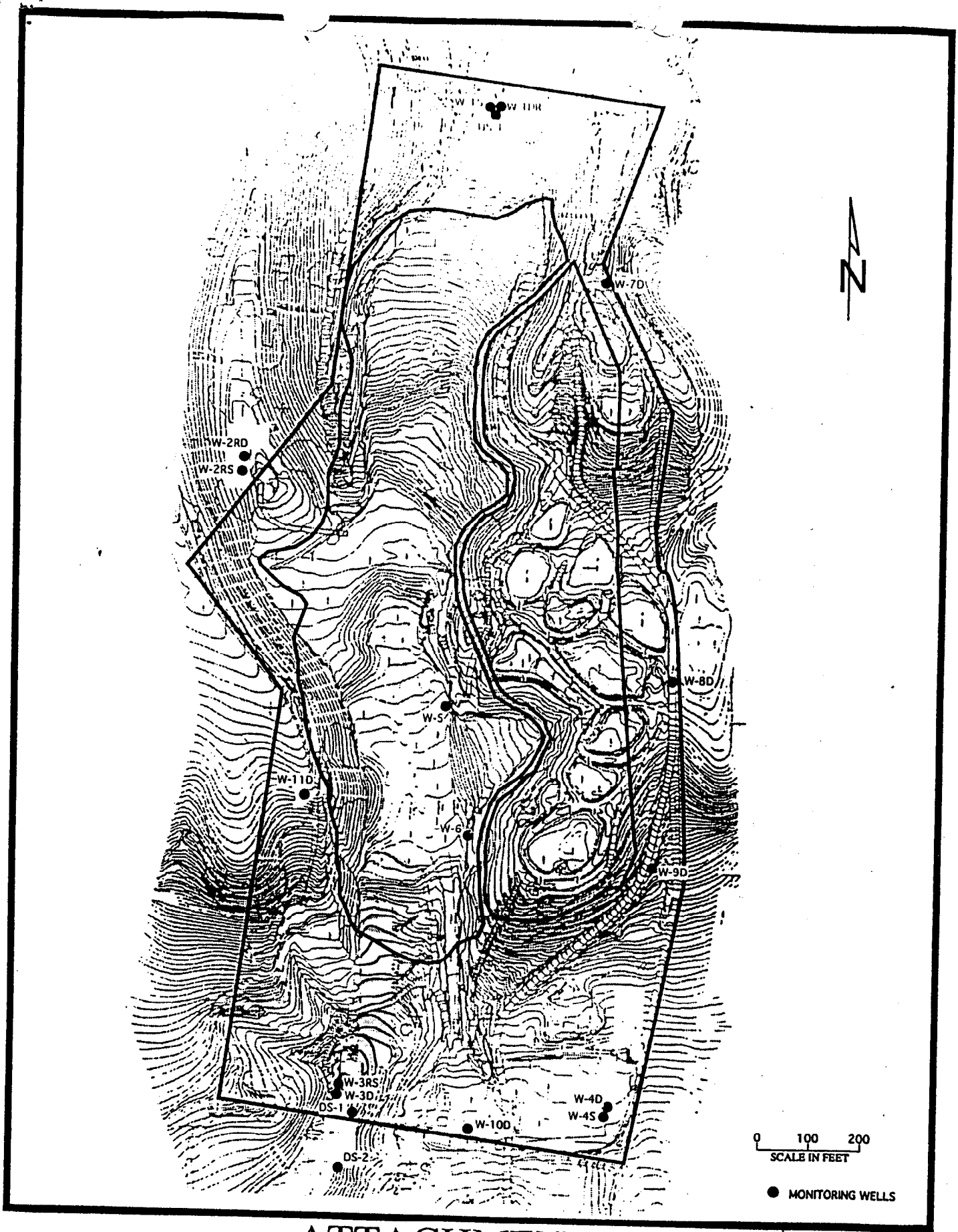
Any surface water which actually or potentially receives surface or ground waters which pass over, through, or under waste materials or contaminated soils.

K. VOLATILE ORGANICS COMPOSITE MONITORING PARAMETER FOR WATER (VOC_{water})

VOC_{water}, a composite parameter that encompasses a variety of VOCs. The constituents addressed by the VOC_{water} Composite Monitoring Parameter include all Appendix I to 40 CFR 258, attachment B to this Monitoring and Reporting Program, and all unidentified peaks.

ORDERED BY _____
Executive Officer

11-22-94
Date



ATTACHMENT A

WELL LOCATION MAP
SANTA CRUZ CLASS III